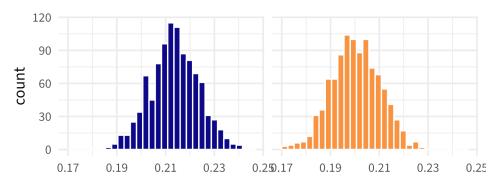
NOTES 16: HYPOTHESIS TEST CONTROVERSIES

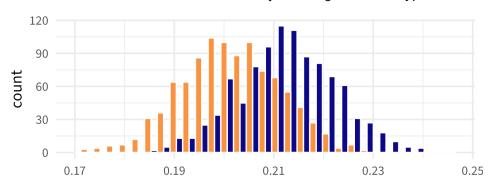
Stat 120 | Fall 2025 Prof Amanda Luby

ESP Example: subjects draw a card at ra then guesses the symbol.	ndom and telepathically communicate this to someone who		
Population parameter:			
Sample statistic:			
H_0 :			
H_A :			
Results 1:			
Results 2:			
results 2.			
Results 3			
With small samples even	_ effects might not be statistically significant		
With large samples even	effects might be statistically significant		

Which is the *bootstrap distribution* and which is the *null distribution*?



Sketch out the confidence interval and the rejection region for the hypothesis test



1 Multiple Testing

When you do a single hypothesis test, your Type I error rate is:

If you do many hypothesis tests, your Type I Error rate is:

If you do 10 tests, your overall Type I Error rate is:

If you do 100 tests, your overall Type I Error rate is:

2 Six principles from ASA statement

- 1. P-values can indicate how incompatible the data are with a specified statistical model.
- 2. P-values do not measure the probability that the studied hypothesis is true, or the probability that the data were produced by random chance alone.
- 3. Scientific conclusions and business or policy decisions should not be based only on whether a p-value passes a specific threshold.
- 4. Proper inference requires full reporting and transparency.
- 5. A p-value, or statistical significance, does not measure the size of an effect or the importance of a result.

3

6. By itself, a p-value does not provide a good measure of evidence regarding a model or hypothesis.